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| Practice No. | 4 |
| Practice Title | Design a simple class |
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# Design a simple class

## Objects

1. To learn the basic of class definition and implementation
2. To learn how to use class object

## Problems

### Design a 2D point

You are required to design a simple class for 2D point. The point class has data fields x and y. They are coordinates of the point in 2D space. This class must have constructor(maybe more than one), destructor (now it is empty), and setters and getters and display functions. Besides these basic functions, this point class also can get the distance of two points.

Then test your class with the following test programs.

## Results

**Algorithm:**

**//----18511160023 EMETUCHE WINNER CHIDIUTO**

**//----Practice 4**

**#include<iostream>**

**#include<string>**

**#include<iostream>**

**#include<math.h>**

**using namespace std;**

**class Point{**

**private:**

**double x,y;**

**public:**

**Point(){}**

**Point(int x1,int y1){**

**x=x1;**

**y=y1;**

**}**

**void SetX(int x3){**

**x=x3;**

**}**

**void SetY(int y3){**

**y=y3;**

**}**

**int GetX(){**

**return x;**

**}**

**int GetY(){**

**return y;**

**}**

**void Set(double x2,double y2){**

**x=x2;**

**y=y2;**

**}**

**double Distance(Point p){**

**return sqrt(1.0\*(x-p.GetX())\*(x-p.GetX())+(y-p.GetY())\*(y-p.GetY()));**

**}**

**void Show(){**

**cout<<"<"<<x<<","<<y<<">";**

**}**

**};**

**int main(){**

**Point p1(0,0),p2,p3;**

**double x,y;**

**p2.SetX(p1.GetX()+5);**

**p2.SetY(p1.GetY()+2);**

**cout<<"Input two doubles:";**

**cout<<"\nExample: 5.00 4.5 \n";**

**cin>>x>>y;**

**p3.Set(x,y);**

**cout<<"Output format <  X, Y >\n";**

**cout<<"\np1 Result = "; p1.Show();**

**cout<<"\np2 Result = "; p2.Show();**

**cout<<"\np3 Result = "; p3.Show();**

**double d1=p1.Distance(p2);**

**double d2=p2.Distance(p3);**

**double d3=p3.Distance(p1);**

**cout<<"\nDistance from p1 to p2="<<d1<<endl;**

**cout<<"\nDistance from p2 to p3="<<d2<<endl;**

**cout<<"\nDistance from p3 to p1="<<d3<<endl;**

**return 0;**

**}**

**Screen shot Result:**

